

Remarks

The instant Office Action dated April 3, 2009 notes the following rejections: claim 23 stands rejected under 35 U.S.C. § 112(2); claims 1-10 and 20- 27 stand rejected under 35 U.S.C. § 103(a) over Chudzik (U.S. Patent No. 7,030,481) in view of Dhong (U.S. Patent No. 6,221,769) and Hsuan (U.S. Patent Pub. 2001/0005046); and claim 9 stands rejected under 35 U.S.C. § 103(a) over Chudzik in view of Dhong and Sakai (U.S. Patent No. 5,872,393). In this discussion set forth below, Applicant does not acquiesce to any rejection or averment in the instant Office Action unless Applicant expressly indicates otherwise.

Applicant respectfully traverses the § 103(a) rejections because each of the cited combinations of references lacks correspondence and lacks any proper/logical motivation. For example, none of the asserted references teaches the claimed invention “as a whole” (§ 103(a)) including aspects directed to, *e.g.*, the dielectric material of the vertical interconnect and the dielectric material of the vertical trench capacitor being common material formed from a single deposition layer (using representative language from claim 1). The Office Action acknowledges that the Chudzik ‘481 reference does not teach these claimed aspects, and the asserted combination of teachings does not result in any useful implementation that would correspond to the claimed invention. The Chudzik ‘481 reference explains that the material 3020 is a hi-K dielectric material (Col. 5:11-16) which requires special high-temperature processing steps and tools and which are incompatible with the conductors employed in the interconnect layers, and further explains that the hi-K dielectric material should be processed first in order to keep the costs a minimum (Col. 5:66 *et seq.*). Consequently, as these issues are expressly addressed by the Chudzik ‘481 reference, the asserted combination proposes a process that would not be implemented because it would both increase costs and attempt to implement an electronic device with improperly/unuseable layers. These references cannot provide correspondence if the asserted combination would not be operable. As such, the § 103 rejection fails.

Applicant further traverses each of the § 103 rejections because the cited references teach away from the Office Action’s proposed combination. Consistent with the recent Supreme Court decision, M.P.E.P. § 2143.01 explains the long-standing principle that a § 103 rejection cannot be maintained when the asserted modification

undermines either the operation or the purpose of the main reference - the rationale being that the prior art teaches away from such a modification. *See KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1742 (2007) (“[W]hen the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be non-obvious.”). As discussed above, the Chudzik ‘481 reference expressly teaches away from the proposed combination for specifically explained reasons that contradict the alleged motivation expressed in the Office Action. In light of the incompatible layers/processing, Applicant submits that the combination would render the invention inoperable. Under M.P.E.P. § 2143.01 and/or §103 as interpreted by the *KSR* decision, the rejections cannot be maintained.

Applicant also traverses each of the rejections concerning the subject matter of the dependent claims. In connection with the rejections of claims 21-23, for example, the alleged ownership of a patent is not a basis for combining otherwise incompatible teachings of the prior art. Further, under M.P.E.P. § 2113, when the structure implied by process steps would be expected to impart distinctive structural characteristics to the final product, the relevant limitations cannot be ignored. *See, e.g., In re Garnero*, 412 F.2d 276, 279 (CCPA 1979). As applied to these rejections, in each instance relevant distinctive structural characteristics would be present in the final product (*e.g.*, the commonality of the material, and the formation of the layered structures emanating from the same material and processing step(s) and tools); thus, the relevant limitations cannot be ignored.

In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Aaron Waxler, of NXP Corporation at (408) 474-9068.

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